

## **OIL ANALYSIS REPORT**

#### Area **Propulsion Shaft Bearings** Machine Id **Propulsion Shaft Bearings Starboard** Component

Front Right Bearing

PETRO CANADA TURBOFLO R&O 100 (--- GAL)

### DIAGNOSIS

#### Recommendation

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. The fluid was specified as PETRO CANADA TURBOFLO R&O 100, however, a fluid match indicates that this fluid is ISO 100 R&O Hydraulic Oil. Please confirm the oil type and grade on your next sample. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

#### **Fluid Condition**

Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.



SAMPLE INFORM	<b>MATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0810841	WC0810871	
Sample Date		Client Info		05 Aug 2023	14 Apr 2023	
Machine Age	hrs	Client Info		0	0	
Oil Age	hrs	Client Info		0	0	
Oil Changed		Client Info		Changed	N/A	
Sample Status				NORMAL	ABNORMAL	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	<1	3	
Chromium	ppm	ASTM D5185(m)	>2	0	0	
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	
Titanium	ppm	ASTM D5185(m)		0	0	
Silver	ppm	ASTM D5185(m)		0	0	
Aluminum	ppm	ASTM D5185(m)	>5	<1	<1	
Lead	ppm	ASTM D5185(m)	>25	9	<b>2</b> 6	
Copper	ppm	ASTM D5185(m)	>5	<1	2	
Tin	ppm	ASTM D5185(m)	>15	2	6	
Antimony	ppm	ASTM D5185(m)		1	5	
Vanadium	ppm	ASTM D5185(m)		0	0	
Beryllium	ppm	ASTM D5185(m)		0	0	
Cadmium	ppm	ASTM D5185(m)		<1	<1	
ADDITIVES		method				history2
		methou	inniv base	Current	Thistory I	motoryz
Boron	ppm	ASTM D5185(m)	IIIII/Dase	6	▲ 35	
	ppm ppm		IIIII/Dase			
Boron		ASTM D5185(m)		6	<b>A</b> 35	
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)		6 0	▲ 35 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		6 0 0	▲ 35 0 0	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		6 0 0	▲ 35 0 0 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		6 0 0 0 0	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>1</li> </ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 4	6 0 0 0 0 4	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>240</li> <li>≥1</li> </ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 4	6 0 0 0 4 67 6 863	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>240</li> <li>21</li> <li>3643</li> </ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 4	6 0 0 0 4 67 6	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>240</li> <li>≥1</li> </ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 4	6 0 0 0 4 67 6 863	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>240</li> <li>21</li> <li>3643</li> </ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) <b>method</b> ASTM D5185(m)	0 4 0 limit/base >15	6 0 0 0 4 67 6 863 <1	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>240</li> <li>21</li> <li>3643</li> <li>&lt;1</li> </ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) <b>method</b> ASTM D5185(m)	0 4 0 limit/base >15	6 0 0 0 4 67 6 863 <1	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>240</li> <li>21</li> <li>3643</li> <li>&lt;1</li> <li>history1</li> </ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) <b>method</b> ASTM D5185(m)	0 4 0 limit/base >15	6 0 0 0 4 67 6 863 <1 <b>current</b> 1	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>240</li> <li>21</li> <li>3643</li> <li>&lt;1</li> <li>history1</li> <li>6</li> </ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) <b>method</b> ASTM D5185(m) ASTM D5185(m)	0 4 0 limit/base >15	6 0 0 0 4 67 6 863 <1 <b>Current</b> 1 <1	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>240</li> <li>21</li> <li>3643</li> <li>&lt;1</li> <li>history1</li> <li>6</li> <li>2</li> </ul>	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 4 0 limit/base >15 >20	6 0 0 0 4 67 6 863 <1 <b>current</b> 1 <1 <1	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>240</li> <li>21</li> <li>3643</li> <li>&lt;1</li> <li>history1</li> <li>6</li> <li>2</li> <li>&lt;1</li> </ul>	      history2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 4 0 1 1 15 >20 1 1 1 1 15	6 0 0 4 67 6 863 <1	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>240</li> <li>21</li> <li>3643</li> <li>&lt;1</li> <li>history1</li> <li>6</li> <li>2</li> <li>&lt;1</li> </ul>	      history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 4 0 1 1 1 1 1 1 5 2 0 1 1 1 1 1 1 1 2 0 1 1 1 1 1 1 2 0 1 1 1 1	6 0 0 4 67 6 863 <1	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>240</li> <li>21</li> <li>3643</li> <li>&lt;1</li> </ul> 6 2  6 2 </th <th>      history2  history2</th>	      history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 4 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 0 0 0 4 67 6 863 <1	<ul> <li>▲ 35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>▲ 240</li> <li>▲ 21</li> <li>▲ 3643</li> <li>&lt;1</li> </ul> 6 2 <1 6 2 <1 bistory1 VLITE NONE	      history2  history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium VISUAL VISUAL Vhite Metal Yellow Metal Precipitate	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) Cisual* Visual*	0 4 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 0 0 0 4 67 6 863 <1	<ul> <li>35</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>17</li> <li>240</li> <li>21</li> <li>3643</li> <li>&lt;1</li> </ul> 6 2 <1 6 2 <1 Nistory1 Kistory1 NONE NONE NONE	      history2  history2

NONE

NORML

NORML

>0.1

scalar Visual\*

scalar Visual\*

scalar Visual\*

scalar Visual\*

scalar Visual\*

NONE

NORML

NORML

NEG

NEG

Sand/Dirt

Odor

Appearance

**Emulsified Water** 

NONE

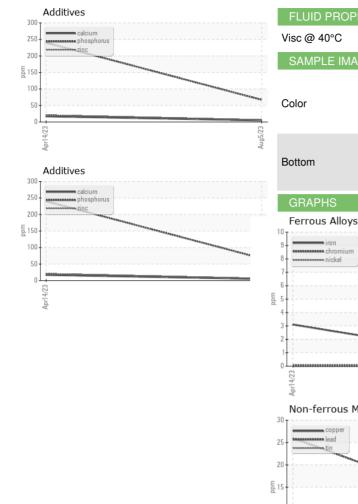
NORML

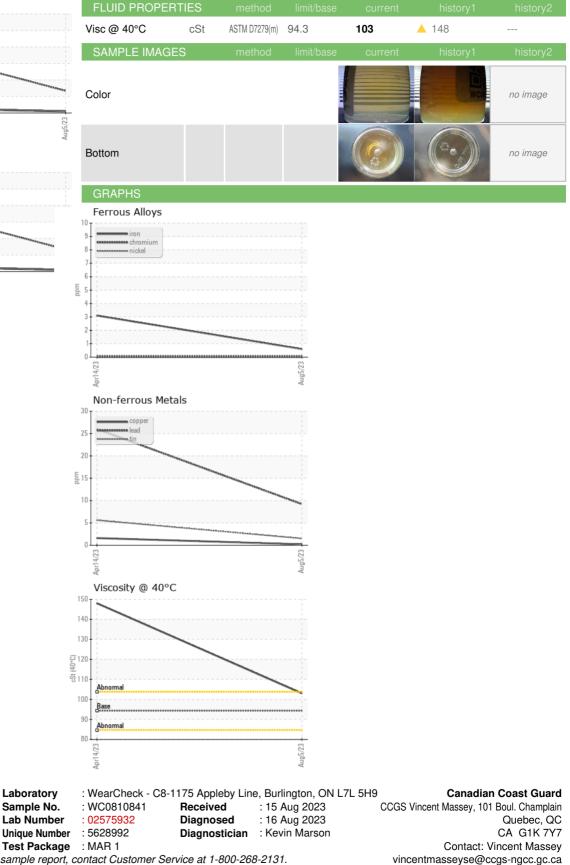
NORML

NEG



# **OIL ANALYSIS REPORT**





Test Package : MAR 1 To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

T: (418)573-7423 F: Submitted By: Vincent Massey

CALA

ISO 17025:2017 Accredited Laboratory

Laboratory

Sample No.

Lab Number